

Basic Linear Patterns #2

Write the relationship between the variables for each pattern.

1

| x | y |
|-----|-----|
| 0 | 5 |
| 1 | 8 |
| 2 | 11 |
| 3 | 14 |
| 4 | 17 |

$y = \underline{\hspace{2cm}}$

2

| x | y |
|-----|-----|
| 0 | 4 |
| 1 | 6 |
| 2 | 8 |
| 3 | 10 |
| 4 | 12 |

$y = \underline{\hspace{2cm}}$

3

| x | y |
|-----|-----|
| 0 | 4 |
| 1 | 9 |
| 2 | 14 |
| 3 | 19 |
| 4 | 24 |

$y = \underline{\hspace{2cm}}$

4

| x | y |
|-----|-----|
| 0 | 8 |
| 1 | 18 |
| 2 | 28 |
| 3 | 38 |
| 4 | 48 |

$y = \underline{\hspace{2cm}}$

5

| x | y |
|-----|-----|
| 1 | 20 |
| 2 | 22 |
| 3 | 24 |
| 4 | 26 |
| 5 | 28 |

$y = \underline{\hspace{2cm}}$

6

| x | y |
|-----|-----|
| 1 | 13 |
| 2 | 23 |
| 3 | 33 |
| 4 | 43 |
| 5 | 53 |

$y = \underline{\hspace{2cm}}$

7

| x | y |
|-----|-----|
| 1 | 17 |
| 2 | 22 |
| 3 | 27 |
| 4 | 32 |
| 5 | 37 |

$y = \underline{\hspace{2cm}}$

8

| x | y |
|-----|-----|
| 1 | 11 |
| 2 | 20 |
| 3 | 29 |
| 4 | 38 |
| 5 | 47 |

$y = \underline{\hspace{2cm}}$

9

| x | y |
|-----|-----|
| 1 | 3 |
| 2 | 0 |
| 3 | -3 |
| 4 | -6 |
| 5 | -9 |

$y = \underline{\hspace{2cm}}$

10

| x | y |
|-----|-----|
| 1 | 3.5 |
| 2 | 4 |
| 3 | 4.5 |
| 4 | 5 |
| 5 | 5.5 |

$y = \underline{\hspace{2cm}}$

11

| x | y |
|-----|-----|
| 1 | 96 |
| 2 | 92 |
| 3 | 88 |
| 4 | 84 |
| 5 | 80 |

$y = \underline{\hspace{2cm}}$

12

| x | y |
|-----|------|
| 1 | 5.5 |
| 2 | 7 |
| 3 | 8.5 |
| 4 | 10 |
| 5 | 11.5 |

$y = \underline{\hspace{2cm}}$

13

| x | y |
|-----|------|
| 1 | 1.5 |
| 2 | 1 |
| 3 | 0.5 |
| 4 | 0 |
| 5 | -0.5 |

$y = \underline{\hspace{2cm}}$

14

| x | y |
|-----|-----|
| 1 | 5 |
| 2 | 13 |
| 3 | 21 |
| 4 | 29 |
| 5 | 37 |

$y = \underline{\hspace{2cm}}$

15

| x | y |
|-----|-----|
| 1 | 0 |
| 2 | 2 |
| 3 | 4 |
| 4 | 6 |
| 5 | 8 |

$y = \underline{\hspace{2cm}}$

16

| x | y |
|-----|-----|
| 1 | 6 |
| 2 | 3 |
| 3 | 0 |
| 4 | -3 |
| 5 | -6 |

$y = \underline{\hspace{2cm}}$

17

| x | y |
|-----|-----|
| 10 | 48 |
| 11 | 52 |
| 12 | 56 |
| 13 | 60 |
| 14 | 64 |

$y = \underline{\hspace{2cm}}$

18

| x | y |
|-----|-----|
| 15 | 77 |
| 16 | 82 |
| 17 | 87 |
| 18 | 92 |
| 19 | 97 |

$y = \underline{\hspace{2cm}}$

19

| x | y |
|-----|-----|
| 13 | 125 |
| 14 | 135 |
| 15 | 145 |
| 16 | 155 |
| 17 | 165 |

$y = \underline{\hspace{2cm}}$

20

| x | y |
|-----|-----|
| 30 | 66 |
| 31 | 68 |
| 32 | 70 |
| 33 | 72 |
| 34 | 74 |

$y = \underline{\hspace{2cm}}$

Answers: Basic Linear Patterns #2

$y = mx + c$ where m is the gradient (increase) and c the start (zero) value

| x | y |
|-----|-----|
| 0 | 5 |
| 1 | 8 |
| 2 | 11 |
| 3 | 14 |
| 4 | 17 |

$c = +5$
increase by 3 each time
 $m = 3$

| x | y |
|-----|-----|
| 0 | 4 |
| 1 | 6 |
| 2 | 8 |
| 3 | 10 |
| 4 | 12 |

$c = +4$
increase by 2 each time
 $m = 2$

| x | y |
|-----|-----|
| 0 | 4 |
| 1 | 9 |
| 2 | 14 |
| 3 | 19 |
| 4 | 24 |

$c = +4$
increase by 5 each time
 $m = 5$

| x | y |
|-----|-----|
| 0 | 8 |
| 1 | 18 |
| 2 | 28 |
| 3 | 38 |
| 4 | 48 |

$c = +8$
increase by 10 each time
 $m = 10$

$$y = 3x + 5$$

$$y = 2x + 4$$

$$y = 5x + 4$$

$$y = 10x + 8$$

5

| x | y |
|-----|-----|
| 0 | 18 |
| 1 | 20 |
| 2 | 22 |
| 3 | 24 |
| 4 | 26 |

$= 20 - 2$
 $c = +18$
increase by 2 each time
 $m = 2$

6

| x | y |
|-----|-----|
| 0 | 3 |
| 1 | 13 |
| 2 | 23 |
| 3 | 33 |
| 4 | 43 |

$= 13 - 10$
 $c = +3$
increase by 10 each time
 $m = 10$

7

| x | y |
|-----|-----|
| 0 | 12 |
| 1 | 17 |
| 2 | 22 |
| 3 | 27 |
| 4 | 32 |

$= 17 - 5$
 $c = +12$
increase by 5 each time
 $m = 5$

8

| x | y |
|-----|-----|
| 0 | 2 |
| 1 | 11 |
| 2 | 20 |
| 3 | 29 |
| 4 | 38 |

$= 20 - 9$
 $c = +2$
increase by 9 each time
 $m = 9$

$$y = 2x + 18$$

$$y = 10x + 3$$

$$y = 5x + 12$$

$$y = 9x + 2$$

9

| x | y |
|-----|-----|
| 0 | 6 |
| 1 | 3 |
| 2 | 0 |
| 3 | -3 |
| 4 | -6 |

$= 3 - -3$
 $c = +6$
decrease by 3 each time
 $m = -3$

10

| x | y |
|-----|-----|
| 0 | 3 |
| 1 | 3.5 |
| 2 | 4 |
| 3 | 4.5 |
| 4 | 5 |

$= 3.5 - 0.5$
 $c = +3$
increase by 0.5 each time
 $m = 0.5$

11

| x | y |
|-----|-----|
| 0 | 100 |
| 1 | 96 |
| 2 | 92 |
| 3 | 88 |
| 4 | 84 |

$= 96 - 4$
 $c = +100$
decrease by 4 each time
 $m = -4$

12

| x | y |
|-----|-----|
| 0 | 4 |
| 1 | 5.5 |
| 2 | 7 |
| 3 | 8.5 |
| 4 | 10 |

$= 7 - 1.5$
 $c = +4$
increase by 1.5 each time
 $m = 1.5$

$$y = -3x + 6$$

$$y = 0.5x + 3$$

$$y = -4x + 100$$

$$y = 1.5x + 4$$

13

| x | y |
|-----|-----|
| 0 | 2 |
| 1 | 1.5 |
| 2 | 1 |
| 3 | 0.5 |
| 4 | 0 |

$= 1.5 - -0.5$
 $c = +2$
decrease by 0.5 each time
 $m = -0.5$

14

| x | y |
|-----|-----|
| 0 | -3 |
| 1 | 5 |
| 2 | 13 |
| 3 | 21 |
| 4 | 29 |

$= 5 - 8$
 $c = -3$
increase by 8 each time
 $m = 8$

15

| x | y |
|-----|-----|
| 0 | -2 |
| 1 | 0 |
| 2 | 2 |
| 3 | 4 |
| 4 | 6 |

$= 0 - 2$
 $c = -2$
increase by 2 each time
 $m = 2$

16

| x | y |
|-----|-----|
| 0 | 9 |
| 1 | 6 |
| 2 | 3 |
| 3 | 0 |
| 4 | -3 |

$= 3 - -3$
 $c = +9$
decrease by 3 each time
 $m = -3$

$$y = -0.5x + 2$$

$$y = 8x - 3$$

$$y = 2x - 2$$

$$y = -3x + 9$$

17

| x | y |
|-----|-----|
| 0 | 8 |
| 10 | 48 |
| 11 | 52 |
| 12 | 56 |
| 13 | 60 |

$= 48 - 10 \times 4$
 $c = +8$
increase by 4 each time
 $m = 4$

18

| x | y |
|-----|-----|
| 0 | 2 |
| 15 | 77 |
| 16 | 82 |
| 17 | 87 |
| 18 | 92 |

$= 77 - 15 \times 5$
 $c = +2$
increase by 5 each time
 $m = 5$

19

| x | y |
|-----|-----|
| 0 | -5 |
| 13 | 125 |
| 14 | 135 |
| 15 | 145 |
| 16 | 155 |

$= 125 - 13 \times 10$
 $c = -5$
increase by 10 each time
 $m = 10$

20

| x | y |
|-----|-----|
| 0 | 6 |
| 30 | 66 |
| 31 | 68 |
| 32 | 70 |
| 33 | 72 |

$= 68 - 30 \times 2$
 $c = +6$
increase by 2 each time
 $m = 2$

$$y = 4x + 8$$

$$y = 5x + 2$$

$$y = 10x - 5$$

$$y = 2x + 6$$